

USSR

UDC 621.317.8

SAFONOVA, S. G., DYKOV, Yu. A.

"Prediction of the Storage Life and Amount of Change in Electrical Resistance During Aging of Microwire Resistors"

V sb. Mikroprovod i pribory soprotivl. (Microwire and Resistance Devices --collection of works), vyp. 7, Kishinev, 1971, pp 171-181 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 8V364)

Translation: The article is devoted to creating a method of accelerated tests for aging during storage of miniature resistors made from cast insulated microwire. The selection of forced conditions is discussed; the characteristics of the selected conditions are presented. A special thermostatically controlled chamber was made for the tests. A procedure is outlined for predicting storage life from test data. Results are presented from testing of a series of resistors, showing their comparatively high stability. Five illustrations, two tables, bibliography of five titles.

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USSR

UDC 547.853.7.07:539.183.2

SAVIN, YU. I., SINGIN, A. S., SAZONOV, N. V., KROPACHEVA, A. A., and SAFONOVA
T. S., Scientific Research Institute of Medical Radiology, Academy Medical
Sciences USSR, Obninsk; All Union Scientific Chemical-Pharmaceutical Institute
imeni S. Ordzhonikidze, Moscow

"Synthesis of Phosphorus Tagged Diethyleneimide of Pyrimidyl-2-imidophosphoric
Acid [Phosphemide]"

Riga, Khimiya Ceterotsiklicheskikh Soyedineniy, No 9, Sep 73, pp 1251-1253

Abstract: The following synthetic route was selected for the synthesis of
diethyleneimide of pyrimidyl-2-amidophosphoric acid [phosphemide] (I).
From the reaction of equimolar quantities of 2-aminopyrimidine and phosphorus
pentachloride in benzene 2-trichlorophosphazopyrimidine hydrochloride was
obtained which was then converted to pyrimidyl-2-amidophosphoric acid dichloride
by a reaction with 98% formic acid, which finally could be reacted without
purification with ethyleneimine to yield I. Depending on the activity of the
starting $^{32}\text{PCl}_5$ the specific activity of phosphemide- ^{32}P was 5-10 μc per gram.

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USSR

UDC 615.277.3:546.185.325

SAZONOV, N. V., KROPACHEVA, A. A., and SAFONOVA, T. S., All Union Scientific
Chemical-Pharmaceutical Research Institute Imeni S. Ordzhonikidze, Moscow

"Diethyleneimides of Pyridyl-2-amidophosphoric Acids"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 1, Jan 71, pp 20-24

Abstract: In an attempt to synthesize novel antitumor agents, a series of
acyl chlorides and diethyleneimides of pyridyl-2-amidophosphoric acid was
obtained. A suspension of 3 g of 2-aminopyridine and 6.65 g PCl₅ in 50 ml
benzene was refluxed for 2 hrs under a stream of nitrogen, cooled, filtered,
washed with ether; 100 ml of ether was added to the precipitate and treated
with 1.47 g anhydrous formic acid. After 12 hrs the precipitate was collected
to give pyridyl-2-amidophosphoric acid chloride, m.p. 177-180°. Analogously
6-methylpyridyl-2-amidophosphoric acid chloride, m.p. 127-129° was obtained.
To obtain the diethyleneimides of pyridyl-2-amidophosphoric acid, 5-nitropy-
ridyl-2-amidophosphoric acid chloride was added with stirring and cooling to
a mixture of ethyleneimine and triethylamine in benzene. The mixture was
stirred 2 hrs and worked up to yield desired products.

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007
TITLE--6, HYDRAZINOPYRIMIDO, 4, 5, 8, 1, 4, THIAZINES OR
6, HYDRAZINOPYRAZINO, 2, 3, 8, 1, 4, THIAZINES -U-
AUTHOR--(03)-SAFONOVA, T.S., NEMERYUK, M.P., MYSHKINA, L.A.
PROCESSING DATE--04DEC70
UNCLASSIFIED
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 265,110
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HYDRAZINE ORGANIC COMPOUND, PYRIMIDINE, ORGANIC SULFUR
COMPOUND, ORGANIC SYNTHESIS, CHEMICAL PATENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1767
CIRC ACCESSION NO--AA0137007
STEP NO--UR/0482/70/000/000/0000/0000
UNCLASSIFIED

2/2 009

CIRC ACCESSION NO--AA0137007

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPOS. ARE PREPD. BY
TREATING 6,AMINOPYRIMIDO(4,5,B) (1,4)THIAZINES OR 6,AMINOPYRAZINO(1,3,B)
(1,4)THIAZINES WITH HYDRAZINE HYDRATE AT THE B.P. OF THE REACTION MASS,
PREFERABLY IN AN ORG. SOLVENT (E.G. METHANOL OR ETHANOL).
FACILITY: VSESOUZNYI NAUCHNO-ISSLEDOVATEL'SKIY
KHIMIKO-FARMATSEVTICHESKIY INSTITUT IM. SERGO ORDZHONIKIDZE.

UNCLASSIFIED

USSR

UDC 547.856.867.07

SAZONOV, N. V., SAFONOVA, T. S., All-Union Scientific Research Chemico-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Study of Nitrogen and Sulfur-Containing Heterocycles. XXIV. Synthesis of Pyrimido[5,4-b][1,4]oxazinones-7"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1285-1288

Abstract: As a continuation of the work of T. S. Safonov, et al., Puti sinteza i izyskaniya protivopukholevykh preparatov, Zinatne Press, Riga, No 3, 19, 1970 in the search for biologically active substances, a general procedure was developed for the synthesis of 7-hydroxy-derivatives of pyrimido[5,4-b]oxazine by the reaction of 5-hydroxy-6-aminopyrimidines with ethyl esters of α -halocarboxylic acids. The chemical formulas, structures, melting points and the theoretical and experimental contents of the compounds are tabulated. The experimental procedures and results are presented for 2-methyl-4-hydroxy-6-aminopyrimidyl-5-hydrosulfate, 2-methyl-4,5-dihydroxy-6-aminopyrimidine, 2-methyl-4-chloro-5-hydroxy-6-aminopyrimidine, 4-chloro-5-hydroxy-6-aminopyrimidine, 2,4-dimethyl-6-aminopyrimidyl-5 hydrogen sulfate, 2,4-dimethyl-5-chloro-6-aminopyrimidine, 2-methyl-4-hydroxy-6,7-

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SAZONOV, N. V., and SAFONOVA, T. S., Khimiya Geterotsiklicheskikh Soyedineniy,
No 9, 1972, pp 1285-1288

dihydro-8H-pyrimido[5,4-b][1,4]oxazinone-7, 2-methyl-4-chloro-6,7-dihydro-
-8H-pyrimido[5,4-b][1,4]oxazinone-7 and 2-acetylamido-4,6-dimethyl-6,7-
-dihydro-8H-pyrimido[5,4-b][1,4]oxazinone-7.

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028
UNCLASSIFIED
TITLE--CRITICAL CURRENT DENSITY THROUGH MAGNETOHYDRODYNAMIC GENERATOR
ELECTRODES MADE FROM ZIRCONIUM DIOXIDE YTTRIUM SESQUIOXIDE CERAMICS -U-
AUTHOR--(02)-GOKHSHTEYN, YA.P., SAFONOV, A.A.
PROCESSING DATE--04DEC70
COUNTRY OF INFO--USSR
SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(2), 398-402
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--MHD GENERATOR, CURRENT DENSITY, ELECTRODE, ELECTRODE DESIGN,
ELECTRODE REACTION, OXIDE CERAMIC, ZIRCONIUM DIOXIDE, YTTRIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0487
CIRC ACCESSION NO--AP0137578
STEP NO--UR/0294/70/003/002/0398/0402
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137578

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESTABILIZATION, CRACKING, AND WT. LOSS IN ZRO SUB2 (0.85)-Y SUB2 O SUB3 (0.15) SPECIMENS, HAVING EMBEDDED PT ELECTRODES, WERE STUDIED IN AIR AT 1673DEGREESK AND AT C.D. LARGER THAN OR EQUAL TO 3.0 A-CM PRIME2. CATHODIC POLARIZATION MEASUREMENTS AT 0 TO MINUS 3.0 V REVEALED 3 DISTINCT REGIONS FOR EACH CURVE: (1) RISE IN C.D. WITH CHANGE OF EMF. FROM 0; (2) SATN. CURRENT PLATEAU AT MINUS 0.5 TO MINUS 1.2 V; (3) A FURTHER INCREASE IN C.D. WT. LOSSES OF 0.0203-0.1883 G OBSD. IN EXPTS. OF SMALLER THAN 300 HR DURATION AT C.D. SMALLER THAN OR EQUAL TO 3 AM-CM PRIME2 ON 10.963 G SPECIMENS WITH A 25PERCENT APPARENT POROSITY AND D. EQUALS 4.3 G-CM PRIME3 ARE DISCUSSED. MECH. WEAKENING OF SPECIMENS IS ATTRIBUTED TO STRUCTURAL TRANSFORMATIONS IN ZRO SUB2 AT THE CRIT. C. D. OF 0.8-0.9 A-CM PRIME2. FACILITY: INST. VYS. TEMP., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 531.31

APYKHIN, N. G., PICHTKOVKIY, A. A. and SAFRAY, V. M. Moscow

"On a Lyapunov Function in the Problem of the Movement of a Solid Body"

Moscow, Prikladnaya Matematika i Mekhanika Vol 37, No 2, Mar-Apr, 73, pp 346-349

Abstract: In considering the permanent rotations of a solid body attached at one point to a base, it is not possible to construct a Lyapunov function as a group of primary integrals of the equation of movement if the attachment point is somewhat moveable, because of the lack of an energy integral. This article considers another possible technique for constructing the Lyapunov function in the form of a quadratic with coefficients representing functions of time. The first step in the demonstration is the development of a single parametric family of cycles and the demonstration that if the quadratic form with constant coefficients is positive definite the family of cycles is between two constant cycles. It is then shown that if the derivative of this family is negative or identically zero the unperturbed motion is Lyapunov stable. The method is applied to the rotary motion of a Lagrange top.

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USSR

UDC: 519.31/33

SAFRO, V. M., Department of Differential Equations, Moscow State University

"Solution of a Minimax Problem"

Moscow, Vestnik Moskovskogo Universiteta, Matematika, Mekhanika, No 1,
Jan/Feb 73, pp 3-11

Abstract: The author considers solution of the following minimax problem:
Let there be given a function $f(x, y, y')$ defined on smooth or piecewise-
-smooth continuous functions $y(x)$, $0 \leq x \leq h$, which satisfies the conditions

$$y(0) = a, \quad y(h) = b,$$

or the conditions

$$y(0) = a, \quad \int_0^h y(x) dx = w.$$

Such functions are termed admissible, and $f(x, y, y')$ is called an operator
in the space $D_1[0, h]$ of smooth functions $y(x)$:

$$\|y(x)\|_{D_1[0, h]} = \max_{[0, h]} \{ |y(x)|, |y'(x)| \}.$$

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SAFRO, V. M., Vestn. Mosk. Un-ta, Mat., Mekh., No 1, Jan/Feb 73, pp 3-11

or in the space $D_1[0, h]$ of piecewise-smooth functions $y(x)$:

$$\|y(x)\|_{D_1[0, h]} = \max_{[0, h]} \{ |y(x)|, |y'(x-0)|, |y'(x+0)| \}.$$

It is required to find the admissible function $y_0(x)$ such that

$$\max_{[0, h]} f(x, y_0(x), y'_0(x)) = \min_{y(x)} \max_{[0, h]} f(x, y(x), y'(x)).$$

In other words, the functional

$$M(y) = \max_{[0, h]} f(x, y, y')$$

is to be minimized. It is shown that the problem has analogies with the fundamental problem of variational calculus on minimization of the func-

tional $J(y) = \int_0^h f(x, y, y') dx$ and is related to this problem.

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1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--POSSIBLE CHECK OF T INVARIANCE IN FOUR LEPTONIC DECAYS OF K
PRIMEPLUS OR MINUS MESONS -U-
AUTHOR--SAFRONOV, A.N. S
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(3), 641-7
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--RADIOACTIVE DECAY SCHEME, LEPTON, K MESON, ELECTROMAGNETIC
INTERACTION, PHOTON EMISSION, TRANSITION PROBABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1991/1065

STEP NO--UR/0367/70/011/003/0641/0647

CIRC ACCESSION NO--AP0110755

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110755

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A POSSIBILITY TO CHECK THE T INVARIANCE IN K PRIMEPLUS OR MINUS YIELDS MU PRIMEPLUS OR MINUS NU (BAR NU)E POSITIVE E NEGATIVE PROCESSES INDUCED BY A WEAK AND VIRTUAL ELECTROMAGNETIC INTERACTION IS ANALYZED ON THE BASIS OF THE T ODD CORRELATION CONTG. PARTICLE MOMENTA ONLY. THIS CORRELATION CAN PROVE AN ESSENTIAL EFFECT ON THE DIFFERENTIAL PROBABILITY OF THE ABOVE DECAY IF THE MECHANISM OF THE T INVARIANCE VIOLATION IS CLOSELY RELATED WITH THE PHOTON EMISSION. FACILITY: MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 533.9.07

BELIKOV, A. G., GONCHARENKO, V. P., GONCHARENKO, D. K., DEREPOVSKIY, N. T.,
SAFRONOV, B. G., KHIZHNYAK, N. A.

"Energy Characteristics of a Coaxial Plasma Source"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1881-1886

Abstract: Some considerations are presented on selecting the parameters of a coaxial plasma source. On the basis of this preliminary theoretical study, a plasma source is determined and its energy characteristics are experimentally investigated. It is shown that plasmoid energy increases in proportion to the energy stored in the battery of the plasma source. The total plasmoid energy is greater than 1 kJ. It is shown that pure hydrogen plasmoids can be produced. Eight figures, bibliography of five titles.

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1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--STUDY OF HEAT FLUXES IN A PULSED PLASMA ACCELERATOR -U-

AUTHOR--(04)-RUSANOV, V.P., SAFRONOV, B.G., VERESHCHAGIN, V.L., POPOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--INZH. FIZ. ZH.; 18: 534-7 (MAR 1970)

DATE PUBLISHED----MAR 70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA ACCELERATOR, PLASMA JET, ELECTRODE PROPERTY, ENERGY SPECTRUM, TEMPERATURE MEASUREMENT, PLASMA MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1200

STEP NO--UR/0170/70/013/000/0534/0537

CIRC ACCESSION NO--AP0124854

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE PULSED OPERATION OF AN EROSION TYPE PLASMA ACCELERATOR, THE THERMAL STATE OF STRUCTURE ELEMENTS IS DETERMINED AND THE PARAMETERS OF THE PLASMA JET ARE MEASURED. THE INNER ELECTRODE IS SHOWN TO HAVE THE HIGHEST TEMPERATURE. WITHIN THE OPERATION OF THE ACCELERATOR, AN INTENSIVE RISE IN DIELECTRIC TEMPERATURE TAKES PLACE RESULTING IN CHANGES IN THE PLASMA JET PARAMETERS. ESTIMATION OF THE ENERGY DISTRIBUTION IN A DISCHARGE WAS CARRIED OUT FROM THE MEASUREMENT RESULTS.

UNCLASSIFIED

USSR

UDC 533.916

ASEYEV, G. G., KUZNETSOVA, G. G., REPALOV, N. S., SAFRONOV, B. G.,
KHIZHNYAK, N. A.

"Parametric Instability of an Electron Beam in a Spatially Periodic Electric Field"

Fiz. plazmy i probl. uprav. termovader. sinteza. Resp. mezhved. sb.
(Plasma Physics and Problems of the Controlled Thermonuclear Fusion.
Republic Interdepartmental Collection), 1972, No. 3, pp 202-208 (from
RZh-Fizika, No 11, Nov 72, Abstract No 11G248)

Translation: Experimental studies of parametric instability of an electron beam as it passes through a spatially periodic electric field are described. The functional relationship between the level of the high-frequency radiation and the accelerating voltage and the current of the gun and also the magnitude of the external electric field is investigated. It was established that these relationships have a resonance character. Theoretical and experimental results for the case of resonance at the second harmonic of the plasma frequency of the beam agree quite satisfactorily. The results are analyzed.

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UDC 621.762.002.5(088.8)

USSR

DRUSHININ, L. K., LIEPINA, YE. D., KUVSHINOV, P. S., SIMONOV, L. P., SAFRONOV, B. V., PERFILOV, L. S., and TOKAREVA, L. I.

"Apparatus for Making Powders and Granules by Centrifugal Pulverization of Melt"

Ussr Authors' Certificate No 272501, Cl. 31 b³, 9/00; 49 1, 3, [B 22 f 9/00, B 05 b 3/12/, filed 12 Sep 68, published 2 Sep 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 35470P by G. Dorkacheva)

Translation: An apparatus is suggested for making powders and granules by centrifugal pulverization of a melt. The apparatus consists of a rotating ring with a hole in the bottom for delivery of the material to be pulverized, a local heat source situated above this material, and a cooler which is unique in that, in order to increase powder and granule quality, it is rigidly fastened to the outside of the ring.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THERMAL EFFECTS DURING THE HEATING OF SYNTHETIC QUARTZ CRYSTALS -U-
AUTHOR-(04)-GAVRILKO, V.M., KASHKUROV, K.F., KLESHCHEV, G.V., SAFRONOV,
~~G.M.~~
COUNTRY OF INFO--USSR S
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 421-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--QUARTZ, CRYSTAL, NONMETALLIC INCLUSIONS, ENDOTHERMIC EFFECT,
THERMAL ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0832 STEP NO--UR/0363/70/006/003/0421/0424
CIRC ACCESSION NO--AP0118008
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118008

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SYNTHETIC QUARTZ CRYSTALS WERE INVESTIGATED BY DTA. THE HEATING CURVES OF SYNTHETIC QUARTZ SAMPLES STUDIED SHOWED THE FOLLOWING THERMAL EFFECTS: ENDOTHERMAL EFFECT AT 530-570DEGREES, ASSOCD. WITH POLYMORPHIC TRANSFORMATION IN QUARTZ; ENDOTHERMAL EFFECT AT 100-190DEGREES, OBSD. FOR SAMPLES THAT CONTAIN INCLUSIONS OF THE COLLOIDAL PHASE; ENDOTHERMAL EFFECT AT 140-240DEGREES, ASSOCD. WITH MICROSCOPIC INCLUSIONS OF THE ORIGINAL SOLN. IN THE CRYSTAL; EXOTHERMAL EFFECT AT 200-410DEGREES, FOR WHICH THE MICROGLASSY INCLUSIONS IN THE CRYSTALS ARE PROBABLY RESPONSIBLE. FACILITY: INST. OBSSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.383.98

AVER'YANOV, G. A., ~~SAFRONOV, I. N.~~, SAVICHEV, B. M., YEGOROV, A. S.

"A Photoelectric Channel With Stabilization of the Range of Variation in the Output Signal"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 72, pp 103-105

Abstract: The paper describes the circuit and gives the results of a laboratory check of the input section of a photoelectric channel which provides linear conversion and stabilization within the range of linearity of a monopulse light signal amplifier where the light signal varies over a wide power range. A block diagram of the photoreceiver and a schematic diagram of the input section of the photoelectric channel are given as well as the amplitude characteristic of the photoreceiver channel and oscillograms of output signals. Four figures, bibliography of two titles.

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AA0044791-

SAFRONOV LA UR 0482

'Soviet Inventions Illustrated, Section II Electrical, Derwent,

243222 SUPERSONIC DIFFUSER FOR A WIND TUNNEL provides
more versatility by making use of inter-
changeable revolving sections formed in a drum and
cooled by a common supply of water. In the diagram,
the diffuser consists of inlet and outlet portions
1,2, with the centre sections 3 built into drum 4

and forming the working tract. To allow for
thermal deformation, the section 3 is fastened to
the front end 5 of drum 4 with the bellows
connector 6. Each section 3, in the working
position, is sealed to parts 1,2 by means of an
annular plunger on each of its ends, provided with
a rubber O-ring packing and forced against the
mating end surface of 1 or 2 by a diaphragm in an
annular intensifier chamber fed with compressed air.
18.12.67 as 1204562/40-23.L.N.KOPP et al.(24.9.69)
Bul 16/5.5.69. Class 42k. Int.Cl.G 01m.

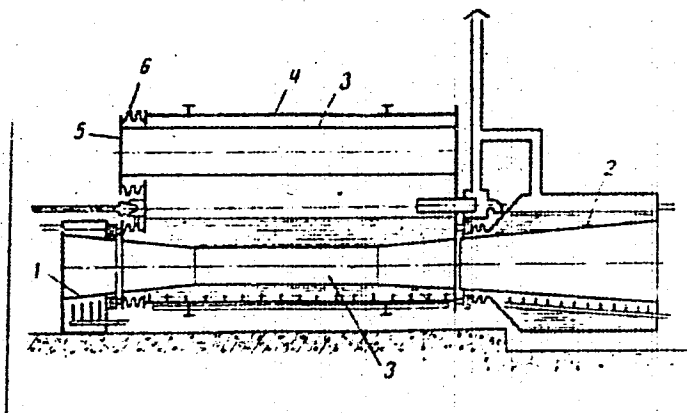
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19771613

AA0044791



AUTHORS: Kopp, L. N.; Kuleshov, V. I.; Mezhirov, I. I.;
Safronov, L. A.

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SAFRONOV, L. K.

Electromechanics

Electromechanics

JPRS 56235
12 June 1972

GLORIA

QUALITY CONTROL SYSTEM FOR PRODUCTION OF MAGNETIC ANGULAR CONVERTER

UDC 661.142.6

Article by L. K. SAFRONOV, V. S. Ivanov, Leningrad Polytechnical Institute
Im. M. I. Kalinin, Leningrad, Izvestiya Vsesoyuznogo tekhnicheskogo zavoda
Elektromekhanika, Moscow, Vol. 15, No. 3, 1972. Planned to press 16 September
1971, pp 70-74.

A method is proposed for monitoring a magnetic angular converter by means of a printout system. The procedure of evaluating the production precision of the converter is described.

The development of magnetic recording technology stimulated a need for the development of positional magnetic angular converters (MAC) [1], the code mask of which is written on magnetic tape in a special code (usually in cyclic code), and the sensitive elements are general-purpose current-sensitive magnetic heads, such as Hall heads [2].

The magnetic mask of the n-bit cyclic binary angular converter can be written in the presence of n-bit cyclic binary generator. The low-order bit of an n-bit photoelectric converter can be used as the binary pulse generator. The sample interrogation frequency f_0 during recording of the magnetic code mask is selected from the condition

$$f_0 > \frac{1-p}{pT_0} \quad (1)$$

where T_0 is the sample retrieval period in the recording mode, p is the accuracy of recording of the code mask ($p < 0.5$).

In the case when the interrogation pulses are displaced arbitrarily in phase relative to the boundaries of discreteness of the sample, the relative arithmetic mean error of recording (with a perfect head) will be

$$P_e = \frac{2^{n-1}}{nT_0} \quad (2)$$

- 1 - [I - USSR - F]

1/2 016 UNCLASSIFIED
TITLE--EDGE RADIATION OF CADMIUM SULFIDE -U-

PROCESSING DATE--20NOV70

AUTHOR--(03)--GERASIMENKO, N.N., DVURECHENSKIY, A.V., SAFRONOV, L.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. PCLUPROV. 1970, 4(3), 478-83

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CADMIUM SULFIDE, FREE ELECTRON, ELECTRON CAPTURE, INORGANIC CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1714

STEP NO--UR/0449/70/005/003/0478/0483

CIRC ACCESSION NO--AP0120426

UNCLASSIFIED

2/2 016
CIRC ACCESSION NO--AP0120426

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EDGE RADIATION WAS STUDIED EXPTL. AT T GREATER THAN OR EQUAL TO 80DEGREESK; CDS CRYSTALS OF VARIOUS PURITIES WERE USED. IN THIS TEMP. REGION, THE EDGE RADIATION CAN BE CAUSED BY BOTH A DONOR ACCEPTOR RECOMBINATION AND A FREE ELECTRON CAPTURE BY THE ACCEPTOR CENTER. BOTH MECHANISMS AND THE KINETICS OF EDGE RADIATION ARE DISCUSSED IN DETAIL. FACILITY: INST. FIZ. PQLUPROV., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 621.376

MAGDICH, L.N., SAPRONOV, O.I., SASOV, V.N.

"Microwave Modulation Of Infrared Radiation"

Kvantovaya elektronika (Quantum Electronics), Moscow, No (12), 1972, pp 111-112

Abstract: Experiments are described concerned with modulation using a resonator type modulator with gallium arsenide crystals of laser radiations with wavelengths of 3.59 and 10.6 micron. The resonator is a symmetrical strip line loaded with two gallium arsenide crystals and shorted at the ends. Radiation was only transmitted through one crystal; the other was used for retardation of the modulation wave in the line, necessary with synchronous interaction of the modulation waves and the radiation. Two plane-parallel plates of gallium arsenide inclined to the Brewster angle are used as an analyzer. The length of the resonator is 100 mm, the cross section of the crystals is 3 x 3 mm. G4-5 and G3-21 standard generators were used as sources of the modulating signal. 1 fig. 1 tab. 4 ref. Received by editors, 6 April 1972.

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USSR

UDC 616.8-009.12-089:616.831-089.12-07:616.831.375-008.6-07

VASIN, N. Ya., GURFINKEL', V. S., IL'INSKIY, I. A., and SAPHONOV, V. A., Scientific Research Institute of Neurosurgery imeni N. N. Burdenko, Academy of Medical Sciences USSR, Moscow

"Capsular Effects During Electrostimulation of the Ventrolateral Nucleus of the Optic Thalamus in Stereotaxic Operations for Hyperkinesias"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70, pp 3-6

Abstract: During surgery of the optic thalamus necessitated by various hyperkinesias, determination of the lateral limits of the ventrolateral nucleus is connected with differentiation of motor reactions occurring during stimulation of the ventrolateral nucleus itself, as well as with reactions resulting from stimulation of the internal capsule. Several methods of registering motor reactions have been used, including electromyography and tremorography. Data are presented on mechanographic and myographic analysis of capsular effects obtained during electrostimulation of the ventrolateral nucleus of the optic thalamus in 32 patients subjected to stereotaxic operations. The operations were conducted under local anesthesia. A needle electrode inserted at a right angle to a depth of 7 mm was used for stimulation. The electrode was moved circularly in 45°

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VASIN, N. Ya., et al, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70, pp 3-6

intervals. The ventrolateral nucleus was stimulated at three levels 3 mm apart. On the basis of the duration of the motor-reaction latent periods it was possible to differentiate capsular responses connected with current loops at the electrode terminals in the central regions of the ventrolateral nucleus from reactions associated with direct stimulation of the internal capsule. Simultaneous mechanographic and myographic registration of the motor reactions from different limbs may also be used, together with other physiological tests, for defining the anteroposterior localization of the electrode terminal in the ventrolateral nucleus.

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1/2 008 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE WAY TO A MAN MADE SUN -U-
AUTHOR--SAFRONOV, V. S
COUNTRY OF INFO--USSR
SOURCE--RABOCHAYA GAZETA, MAY 24, 1970, P 4, COLS 1-8
DATE PUBLISHED--24MAY70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--THERMONUCLEAR REACTOR, NUCLEAR PHYSICS INSTITUTE,
STELLARATOR/(U)URAGAN THERMONUCLEAR DEVICE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/1176 STEP NO--UR/9015/70/000/000/0004/0004
CIRC ACCESSION NO--AN0105977
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AN0105977

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE GIVES THE BACKGROUND THAT LED TO THE DEVELOPMENT OF THE THERMONUCLEAR REACTOR URAGAN AT THE DEPARTMENT OF PLASMA PHYSICS. THE DEPARTMENT OF PLASMA PHYSICS WAS ESTABLISHED IN 1958 AT THE KHAR, KOV PHYSICAL TECHNICAL INSTITUTE OF THE UKRAINIAN ACADEMY OF SCIENCES BY KIRILL DMITRIYEVICH SINEL, NIKOV BY REORGANIZING THE LABORATORY FOR THE DEVELOPMENT OF LINEAR ACCELERATORS. TODAY THE DEPARTMENT HOLDS THE SECOND PLACE IN THE SOVIET UNION AS TO THE SIZE OF ITS STAFF AND TECHNICAL CAPABILITIES. IN 1960, THE DEPARTMENT WAS VISITED BY I. KURCHATOV WHO PROPOSED THAT THE DEPARTMENT UNDERTAKE THE CONSTRUCTION OF A LARGE THERMONUCLEAR REACTOR OF AN ENTIRELY NEW TYPE. THE DEPARTMENT TOOK UP THIS RESPONSIBILITY AND THE RESULT WAS THE URAGAN WHOSE CONSTRUCTION WAS PLANNED TO BE COMPLETED BY THE 50TH ANNIVERSARY OF THE UKRAINIAN REPUBLIC. SEVERAL ORGANIZATIONS PARTICIPATED IN THE DEVELOPMENT AND CONSTRUCTION OF THE REACTOR. THE OVERALL DIRECTION OF THE PROJECT WAS EXERCISED BY THE STATE COMMITTEE FOR THE UTILIZATION OF ATOMIC ENERGY, USSR. THE URAGAN WAS COMPLETED AND ACCEPTED BY A GOVERNMENT COMMISSION IN 1967. ITS MAGNETIC SYSTEM CALLED STELLARATOR HAS 30 PRINCIPAL AND 2 HELICAL COILS. THE SHEAR OF THE SYSTEM IS SEVERAL TIMES AS HIGH AS THE BEST US. THE POWER FOR THE INDUCTION OF THE MAGNETIC FIELD IS GENERATED BY THREE GENERATORS. PLANS ARE BEING WORKED OUT TO EMPLOY A COMBINED METHOD OF RAISING THE TEMPERATURE OF THE PLASMA. THE DEVELOPMENT OF THE URAGAN WAS PRECEDED BY THE DEVELOPMENT OF A SMALL REACTOR, THE SIRIUS.

UNCLASSIFIED

USSR

VOYTSENYA, V. S., ONISHCHENKO, I. N., SAPPA, N. N., SAFRONOV, V. G., and TRUBCHANINOV, S. A.

"Interactions of Moving Plasma with Non-Uniform Magnetic Fields"

Kiev, Fizika Plazmy i Problemy Upravlyayemogo Termoyadernogo Sinteza, No 4, 1973, pp 105 - 113

Abstract: Various types of instabilities have been detected in plasmas moving in a uniform magnetic field, and the unstable movements are apparently determined by the properties of the plasma and the conditions of its entry into an axial magnetic field, independently of the source. Systems in which the magnetic field increases with increasing radius and systems with force-line intersections (helical symmetry) restrict some of these instabilities. Experiments conducted with two configurations - a direct stellarator and a quadrupole magnetic field in combination with an axially symmetric field showed that plasma at a density of approximately 10^{13}cm^{-3} moves along force-lines, leading to a better result for the stellarator field than for the combination of an axially symmetric field and a multipole field. The stellarator field was found to reduce the non-uniformity of electric potential observed with the other field and to leave significantly less plasma close to the walls of the container.

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1/3 037 UNCLASSIFIED
TITLE--FEATURE ARTICLE ON LUNAR MASCONS -U-

PROCESSING DATE--11DEC70

AUTHOR--SAFRCNOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--ZEMLYA I VSELENNAYA, NO 3, 1970, PP 32-38

DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, EARTH SCIENCES AND OCEANOGRAPHY,
SPACE TECHNOLOGY
TOPIC TAGS--GRAVITATION FIELD, LUNAR SURFACE, MODEL/LUNAR LUNA, LUNAR PROBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605040/E08 STEP NO--UR/0384/70/000/003/0032/0038

CIRC ACCESSION NO--AP0142702

UNCLASSIFIED

2/3 037

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142702

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LUNAR ORBITER 5 MEASUREMENTS REVEALED THE PRESENCE OF A GRAVITY FIELD INTENSIFICATION OVER MOST CIRCULAR LUNAR SEAS. FOR EXAMPLE, AT AN ALTITUDE OF 100 KM ABOVE THE MARE IMBRIUM THE ACCELERATION OF GRAVITY WAS 230 MILLIGALS ABOVE THE NORMAL MEAN VALUE. IT IS NATURAL TO ASSOCIATE SUCH ANOMALIES WITH THE PRESENCE OF EXCESS MASSES IN THESE SEAS; THESE WERE GIVEN THE NAME "MASCONS" (MASS CONCENTRATIONS). COMPUTATIONS REVEALED THAT THE EXCESS MASS IN THE MARE IMBRIUM MUST BE 2 TIMES 10 TIMES NEGATIVE OF THE LUNAR MASS. THE MASCON MASSES ARE PROPORTIONAL TO THE VOLUMES OF CRATERS. HOWEVER, CRATER VOLUME IN TURN IS PROPORTIONAL TO THE MASS OF A FALLING BODY. ACCORDINGLY, IT REMAINS UNCLEAR WHETHER MASCONS ARE ASSOCIATED DIRECTLY WITH FALLING BODIES OR WITH MATTER LATER FILLING THE CRATERS. SEVERAL HYPOTHESES HAVE BEEN FORMULATED IN THE UNITED STATES FOR EXPLAINING THESE FEATURES; THESE ARE REVIEWED. THE DIFFICULTIES IN ALL NONISOSTATIC MODELS OF MASCONS ARE DISCUSSED AND IT IS SHOWN THAT SUCH HYPOTHESES ARE UNTENABLE. INSTEAD, THE AUTHORE BELIEVES THAT AN ISOSTATIC MODEL OF A MASCON MUST BE ACCEPTED. IN THE CASE OF LUNAR ISOSTATIC EQUILIBRIUM THERE SHOULD BE NO GREAT STRESSES DEEPER THAN 200-300 KM. THEREFORE, THE POSTULATED NEARSURFACE DENSITY EXCESS IS COMPENSATED BY A CORRESPONDING DENSITY INADEQUACY AT A DEPTH OF ABOUT 100-150 KM. MOST SPECIALISTS BELIEVE THAT THE CONTINENTAL REGIONS ON THE MOON, IN CONTRAST TO THE EARTH'S CONTINENTS, DO NOT CONSIST OF IGNEOUS ROCKS, BUT INSTEAD OF UNDIFFERENTIATED PRIMARY MATTER WHICH HAS NEVER BEEN MOLTEN.

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3/3 037

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142702

ABSTRACT/EXTRACT--THIS CONCLUSION AGREES WITH THE RADIOACTIVITY OF THE CONTINENTAL REGIONS ON THE MOON DISCOVERED BY THE SOVIET "LUNA 10" PROBE. IN THE CONTINENTAL REGIONS THE UPPERMOST RELATIVELY THIN LAYER, REPEATEDLY IMPACTED BY BODIES OF VARIOUS SIZES, IS RATHER POROUS. THE UNDERLYING LAYER, ABOUT 10 KILOMETERS THICK, AS A RESULT OF ITS LOW TEMPERATURE, PROBABLY CONTAINS A GREAT QUANTITY OF VOLATILE MATTER, PARTICULARLY WATER (IN A SOLID STATE, IN HYDRATED MINERALS AND EVEN IN LIQUID FORM) WHICH HAS GRADUALLY PENETRATED FROM THE HOT DEEP LAYERS. AT TOP IN THE CONTINENTAL REGIONS THE DENSITY OF THIS LAYER CAN BE LOW, ABOUT 2 G-CM PRIME3. THE DENSITY OF SOLID BASALTIC LAVA IS APPROXIMATELY 3 G-CM PRIME3. THUS, AT A DEPTH OF 10 KILOMETERS THE SEA REGIONS SHOULD HAVE A CONSIDERABLE DENSITY EXCESS IN COMPARISON WITH THE CONTINENTAL REGIONS. THIS EXCESS DECREASES GRADUALLY WITH DEPTH. AT A DEPTH OF ABOUT 100-200 KM THE PICTURE IS THE OPPOSITE: IN THE CONTINENTAL REGIONS THE DENSITY OF MATTER IS CLOSE TO THE MEAN LUNAR DENSITY (3.34 G-CM PRIME3), WHEREAS IN THE SEA REGIONS THE SOLID LAVA HAS VIRTUALLY THE SAME DENSITY AS ABOVE, ABOUT 3 G-CM PRIME3, THAT IS, LOWER THAN THE MATTER IN THE CONTINENTS AT THIS SAME DEPTH.

UNCLASSIFIED

1/2 050

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--THE PROBLEM OF ATTENUATION OF LASER RADIATION IN THE ATMOSPHERE -U-

AUTHOR--(04)-SAFRONOV, YU.P., SUKHANOV, YA.A., POLUARSHINOV, V.A.,
MAKSIUTOV, T.B.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, MAR. 1970, P. 450-454

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--ATTENUATION, LASER RADIATION, ATMOSPHERE, ATMOSPHERIC
TRANSPARENCY, HELIUM NEON LASER, AEROSOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1989/1021

STEP NO--UR/0368/70/012/000/0450/0454

CIRC ACCESSION NO--AP0107535

UNCLASSIFIED

2/2 050

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107535

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF EXPERIMENTAL STUDIES OF THE FINE STRUCTURE OF THE ATMOSPHERIC SPECTRAL TRANSPARENCY IN VERTICAL DIRECTIONS IN THE RADIATION WAVELENGTH RANGES OF RUBY (6943 A) AND HE-NE (6328 A) LASERS AT VARIOUS ZENITH SIGHTING ANGLES. IT IS SHOWN THAT ATTENUATION OF THE RADIATION OF THESE LASERS OCCURS MAINLY AS A RESULT OF SCATTERING BY GAS MOLECULES AND AEROSOLS. THE TRANSMISSION OF RUBY LASER RADIATION THROUGH THE ENTIRE THICKNESS OF THE ATMOSPHERE AMOUNTS TO A VALUE NO LESS THAN 0.8, WHILE THE CORRESPONDING VALUE FOR AN HE-NE LASER IS 0.6.

UNCLASSIFIED

USSR

UDC: 621.376.56

ALEKSANDROV, A. M., BATETSKIY, N. V., MISHCHENKO, I. N., PODD'YAKOVA, V. N.,
SAFRONOV, Yu. S.

"A Device for Shaping Series-Coded Signals"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 5, Feb 71, Author's Certificate No 293292, Division G, filed 21 Oct 68,
published 15 Jan 71, p 177

Translation: This Author's Certificate introduces a device for shaping series-coded signals of length n . The device contains shift registers and cadence pulse generators. As a distinguishing feature of the patent, the number of digital places in the shift register is reduced by connecting two shift registers in a matrix circuit, one of the registers consisting of n digital places, while the other consists of n/n places. The output of each of the digital places in the second register is connected to those inputs of digital places in the first register where the "ones" of the code to be generated must be recorded for a given group of symbols of length n . The first register operates on a cadence frequency of f , and the second on a frequency of f/n .

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Foundry

USSR

UDC 669.185.1

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NIKIFOROV, B. V., SMOKTIY, V. V., GULIYEV, G. F., ORLOV, V. S.,
SIZENKO, A. S., SAPRONOV, YU. YA., KOLESNIK, V. D., BASHPANOV,
YU. V., RUDNITSKIY, YA. N., PETERSHTEYN, A. D., KAGAN, I. I.,
Institute of Ferrous Metallurgy in Dnepropetrovsk and Krivoy
Rog Metallurgical Plant

"Operating Experience With a 55-Ton Converter With Increased
Blowing Rate"

Moscow, Stal', No 3, Mar 70, pp 215-218

Abstract: Metallurgists of the Institute of Ferrous Metallurgy
in Dnepropetrovsk and Krivoy Rog Metallurgical Plant have
developed a technique for smelting in 55-ton converters with
the oxygen feed rate almost doubled from 2.8-3 to 5-6 cu m/t
per minute. A new-type tuyere is used, the nose of which has
two rows of concentrically arranged nozzles with independent
oxygen feed to each row. The increased blowing rate improves
slag formation. The yield of acceptable product and the degree
of improvement in slag formation are determined by the struc-
tural characteristics of the noses. Nose No. 5 was found to be
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NIKIFOROV, B. V., et al., Stal', No 3, Mar 70, pp 215-216

the most effective of all those tested. The use of a tuyere with nose No. 5 reduces the blowing time by 40 percent and increases converter productivity by 20.5 percent. Steels K St. 5sp, K St. 3sp, 35GS, K St. 5 ps, K St. 3ps, K St. 0m, 08kp, 10kp, K2, K3, KExp., K3lhr, T, and Sv-08A were obtained without any decrease in the yield of acceptable product, deterioration of metal quality, or decrease in refractory lining resistance. In newly designed shops provision should be made for a gas circuit capacity and oxygen feed system sufficient for the operation of converters with a blowing rate of 5-6 cu m/(t. min).

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Mining and Petroleum

USSR

SAFRONOVA, I. B.

"Interrelationship of Jointing in Rock and Propagation Velocity of Elastic Waves"

O Vzaimosbyazi Treshchinovatosti Gornykh Ropod i Skorosti Rasprostpaneniya Uprugikh Voln. [English Version Above], Academy of Sciences USSR, Institute of Earth Physics, Moscow, 1971, 19 pages. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1V881 by V. V. Adushkin).

Translation: A review is presented of work on the problem of studying the regularities of propagation of elastic waves in jointed and porous rock. The basic trends of investigation are presented: experimental studies using models and under natural conditions in order to produce empirical dependences, and theoretical studies on models of porous and jointed rock. It is noted that the existence of dependences of the rate of propagation, as well as amplitudes, absorption decrements, phase and amplitude spectra and other characteristics of elastic waves on jointing or porosity of a rock mass is a clearly established experimental fact. A discussion is presented of the theoretical and experimental works which have been performed and a number of formulas are presented relating the dynamic characteristics of elastic waves to the jointing of rock. As the most promising trend, works are discussed on the investigation of models of cracked media, allowing essential explanation of the qualitative aspect of

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1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CYTOGENETIC ANALYSIS OF AN IMMUNOCOMPETENT STRAIN OF PABBIT SPLEEN
CELLS -U-
AUTHOR-(02)-SAFRONOVA, L.D., DEMIN, YU.S.
COUNTRY OF INFO--USSR
SOURCE--GENETIKA 6(1): 70-77. ILLUS. 1970
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IMMUNOLOGY, RABBIT, SPLEEN, CELL CULTURE, CHROMOSOME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3007/0311

STEP NO--UR/0473/70/006/001/0070/0077

CIRC ACCESSION NO--AP0135806

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135806

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. METAPHASE PLATES OF IMMUNOCOMPETENT CELL CULTURES WERE STUDIED. ABOUT 83.4PERCENT OF ALL CELLS HAD THE DIPLOID SET OF CHROMOSOMES (2N EQUALS 44), 1.3PERCENT WERE HYPERDIPLOID, 8.9PERCENT WERE HYPODIPLOID AND 6.4PERCENT WERE TETRAPLOID. ONE CHROMOSOMAL ABERRATION WAS FOUND. ON 19 METAPHASE PLATES WITH 44 CHROMOSOMES, ALL WERE TRUE DIPLOIDS. NINE WERE MEASURED ON PHOTOMICROGRAPHS AND THE RESULTS WERE ANALYSED STATISTICALLY. THE RESULTS OBTAINED AGREE WITH DATA PUBLISHED ELSEWHERE ON RABBIT CELLS IN VIVO. FACILITY: INST. DEVELOP. BIOL., ACAD. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.6-181.5

SAFRONOVA, L. I., LEYDMAN, G. A., and FARAFONOV, V. V.

"Choice of Aging Mode for Hybrid Integrated Circuits"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Engineering, Scientific-Technical Collection, Microelectronics) 1970, No. 2(23), pp 103-106 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3V320)

Translation: Experiments are described on the application of technological aging to quality control of hybrid microcircuits with hidden defects. Tests were applied for stability under shock, vibration stability, and thermal cycling. The obtained results permitted specification of the break-in period for the microcircuits. Two illustrations, bibliography of one.

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1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ALKALINE SPLITTING OF BETA ACETYLENIC ALCOHOLS -U-
AUTHOR--(04)--VLASOV, V.P., MEDVEDEVA, A.S., CHICHKAREVA, G.G., SAFRONOVA,
L.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 944-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALCOHOL, CHEMICAL DECOMPOSITION, ACETYLENE, DEHYDRATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1306 STEP NG--UR/0062/70/COC/004/0944/0945
CIRC ACCESSION NO--AP0134980
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134980

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING 15 G 1, PENTYN, 4, OL WITH 25 G KOH UNDER ET SUB2 O RESULTED IN INTENSIVE EVOLUTION OF GAS AT 55-60 DEGREES, CONTG. C SUB2 H SUB2 AND MECTRIPL E BOND CH; AT 9508 DEGREES THE GAS CONSISTED OF MEC TRIPLE BOND CH PREDOMINANTLY. 1,6UTYN, 4, OL AND KOH HEATED TO 75-90 DEGREES GAVE C SUB2 H SUB2, BUT AT 100-150 DEGREES GAVE MAINLY MEC TRIPLE BOND CH. THE LATTER ALC. DECOMP. LESS READILY THAN DID THE FORMER. EVIDENTLY THE DECOMP. INTO C SUB2 H SUB2 AND ALKYLENE OXIDE AT THE LOWER TEMP. IS ALTERED BY HIGHER TEMP. INTO FORMATION OF UNSATD. ALC., WHICH UNDERGOES ALLENIC REARRANGEMENT AND DEHYDRATION TO FORM MEC TRIPLE BOND CH AND RCHO. THE REACTION WAS FOLLOWED BY CONVERSION OF THE GASEOUS PRODUCTS INTO CU SALTS AND THEIR IDENTIFICATION.

FACILITY: IRKUTSK. INST. ORG. KHM., IRKUTSK, USSR.

UNCLASSIFIED

USSR

UDC: 577.3

NUZHINA, A. M., SEDYKH, N. V., and SAFRONOVA, M. M., Kazan' State University
imeni V. I. Ul'yanov-Lenin

"Study of Immunological Reactivity and Immune Specificity of LNases from Bac.
amylozyma and Serr. marcescens"

Moscow, Biofizika, Vol 16, No 1, Jan/Feb 71, pp 142-144

Abstract: A study was made of the dielectric properties and conformation changes in the macromolecules of enzymes isolated from *S. marcescens* (strain 41) and *B. amylozyma* (strain 9) and in humoral antibodies elaborated in response to the administration of these nucleases. The reaction of the enzymes with the corresponding antibodies resulted in their dehydration due to rupture of the "biomacromolecule - water" bond and appearance of a "biomacromolecule - biomolecule" (antigen + antibody) bond. It appears that there are complementary groups or regions in the antigen and antibody molecules.

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USSR

UDC 539.184

IVANOV, L. N., IVANOVA, Ye. P., and SAFRONOVA, U. I.

"Third-Order Feynman Diagrams for Degenerate States of Atomic Systems"

Leningrad, Optika i Spektroskopiya, vol. 31, No. 4, 1971, pp 489-495

Abstract: Third-order terms of the expanded energy expression in the theory of perturbations with simple ratios, for the configuration states of $1s2s$, $1s2p$, $1s^22s$, $1s^22p$ are computed in this article. Also computed are the coefficients of Z^{-1} in the Hartree-Fock expansion for the configurations of $1s^22s$ and $1s^22p$. Comparison of the results of these computations with others in the literature indicate the importance of the correlation corrections taken into account by the simple-ratio terms. The degenerate states in the zero order of the perturbations theory are examined without the need for solving the secular equation in order to compute the energy shift. Results of the computations are given in the form of a table listing the third-order energy corrections for the various states.

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1/2 021
TITLE--OSCILLATOR STRENGTHS FOR THE EXCITED STATES OF HELIUM LIKE SYSTEMS
-U-
AUTHOR--(03)-SAFRONOVA, U.I., IVANOVA, A.N., KHARITONOVA, V.N.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(3), 585-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--HELIUM, OSCILLATION, MATRIX ELEMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0922
CIRC ACCESSION NO--AP0121524
STEP NO--UR/0051/70/028/003/0585/0588
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121524

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ZERO AND 1ST ORDER
PERTURBATION CALC. OF THE DIPOLE MOMENT MATRIX ELEMENT AND OSCILLATOR
STRENGTHS OF EXCITED HE LIKE SYSTEMS ARE DESCRIBED. THE 1S PRIME2 1SNP
AND 1SN SUB1 S 1SN SUB2 P TRANSITIONS WERE CONSIDERED.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

1/2 033

TITLE--ULTRAVIOLET FLUORESCENCE OF BIOLOGICAL OBJECTS EXPOSED TO IONIZING RADIATION EFFECTS -U-

AUTHOR--(05)-ALEKSANDROV, S.N., BRUMBERG, I.YE., VOROBTSOVA, I.YE.,
KONDRATYEVA, T.M., SAFRONOVA, V.G.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAYA BIOLOGIYA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P.

66-72

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CANCER, RADIATION BIOLOGIC EFFECT, CELL PHYSIOLOGY, UV
IRRADIATION, FLUORESCENCE, TISSUE TRANSPLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1967

STEP NO--UR/0453/70/004/000/0066/0072

CIRC ACCESSION NO--AP0120619

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120619

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EXPERIMENTAL STUDY OF THE HEREDITARY UV LUMINESCENCE OF CANCEROUS CELLS OF MICE AND LYMPHOSARCOMATOUS CELLS OF RATS TRANSPLANTED TO NONIRRADIATED ANIMALS AFTER EXPOSURE TO A 500 R DOSE OF IONIZING RADIATION. IT IS FOUND THAT THE DAUGHTER CELLS PRODUCED BY SUCH TRANSPLANTED CELLS RETAINED THE FLUORESCENT PROPERTIES OF THEIR PARENT CELLS AND PASSED ON THESE PROPERTIES TO THEIR OFFSPRING DURING THE MULTIPLICATION IN NONIRRADIATED ORGANISMS. THE HEREDITARY TRANSMISSION OF RADIATION INDUCED CHANGES IN THE MYELOCYTES, METAMYELOCYTES AND SEGMENTAL NUCLEUS NEUTROPHILS OF IRRADIATED RATS IS ALSO DEMONSTRATED. THE VARIOUS TYPES OF RADIATION DAMAGE LEADING TO THE INTENSIFICATION OF UV FLUORESCENCE IN IRRADIATED CELLS ARE DISCUSSED.

UNCLASSIFIED

Titanium

USSR

UDC 620.178.1:521.78+9.047

TIMONINA, L. G., GOVOROV, A. A., and SAFROSHENKOV, A. F., Siberian Metallurgical Institute, Chair of the Science of Metals and Hot Working of Metals

"Effect of Diffusion Metallization and Heat Treatment on the Wear Resistance of VT-8 Alloy"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 3, 1973, pp 125-129

Abstract: A study was made of the effect of chemico-thermal treatment on the structure, microhardness, and wear resistance of VT-8 alloy. Specimens of VT-8 alloy were heated in mixes of FeMn (50%), Al_2O_3 (48%), NaF (2%) (Composition 1) and mixes of Cr (25%), Si (25%), Al_2O_3 (48%), NaF (2%) (composition 2) at 900-920° and various soakings with subsequent heat treatment. Diagrams show micro-hardness dependences layer after hardening and aging VT-8 specimens saturated with ferromanganese, chromium, and silicon at 900° saturation temperature, 930° hardening temperature, and 520° annealing temperature. It was found that the temperature, and 520° annealing temperature. It was found that the wear resistance of titanium alloys can be increased by means of thermodiffusion saturation of compositions 1 and 2 and that subsequent heat treatment

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USSR

TIMONINA, L. G., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 3, 1973, pp 125-129

has little effect on the wear resistance. Therefore, for increasing the anti-friction properties of VT-8 alloy only chemico-thermal treatment is recommended. Two figures, four tables, five bibliographic references.

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USSR

UDC 537.311.33

SLABUN, V.I., SAF'YAN, T.L.

"Preparation Of Epitaxial Films Of Solid Solutions Of $Pb_xSn_{1-x}Te$ And $Pb_xSn_{1-x}Se$ And Measurement Of Their Electrical Parameters"

Tr. Gos. optich. in-ta (Works Of State Optical Institute), 1972, 40, No 171, pp 30-31 (from RZh:Elektronika i yeye primeneniye, No 10, Oct 1972, Abstract No 10B105)

Translation: Epitaxial films are prepared of solid solutions of $Pb_xSn_{1-x}Te$ and $Pb_xSn_{1-x}Se$ by sublimation from vapor ~~into~~ freshly-cleaved KCl wafers, and the electrical parameters are measured. I.V.

1/1

USSR

UDC 621.382.2

CHASHCHIN, S. P., SAF'YAN, T. L., BARYSHEV, N. S., AVER'YANOV,
I. S., and MARKINA, N. P.

" $Pb_{1-x}Sn_xSe$ Monocrystalline Photodiodes"

Leningrad, Fizika i tekhnika poluprovodnikov, vol. 5, No. 8, 1971,
p 1633

Abstract: The Pb-Sn-Se combination has promise as an infrared sensor in a broad range of wavelengths. This brief communication shows that annealing the crystals of this combination is unnecessary to obtain the photosensitivity in the p-n junction formed by the crystals since there is always a region of low vacancy concentration when the junction is obtained by deviating from the stoichiometric state. The authors describe the method they have developed for preparing $Pb_{0.95}Sn_{0.05}Se$ diodes of the p-type with a carrier concentration of 10^{19} per cubic centimeter. A curve of the spectral distribution for the photosensitivity of such diodes at the temperature of liquid nitrogen is given. The curve shows a maximum at a wavelength of about 10 microns.

1/1

Phytology

USSR

UDC 632.931

SAP'YANOV, S. P., Candidate of Biological Sciences; ZHIDKOV, V. M., Assistant, Volga Scientific Research Institute of Irrigation Farming, Volgograd Agricultural Institute

"Brown Wheat Rust on Irrigated Fields"

Moscow, Zashchita Rasteniy, No 9, 1971, pp 16-17

Abstract: During 1968-1970 at the "Gornaya Polyana" training farm of Volgograd Agricultural Institute, tests established the dependence of development of brown leaf rust on sowing times. Rates for winter wheat varieties, Bezostaya I, Mironovskaya 808 and Yubileynaya 50 for seven sowing times (from 15 August through 15 October) were established. It was found that the plants are infected with rust in the fall. The disease appears earlier and is more pronounced in wheat planted at early sowing times than in wheat planted in optimum sowing periods. The best sowing time for Mironovskaya 808 is 25 August-25 September, at the time of irrigation, and for Bezostaya I, 5-25 September. The Bezostaya I variety was found to be the most resistant to brown rust, then Yubileynaya 50 and Mironovskaya 808.

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USSR

Plant Pathology

UDC 632.4:633.11

SAF'YANOV, S. P., Senior Scientific Associate, Volga Scientific Research
Institute of Irrigation Agriculture

"Some Experience in Combating Wheat Rust"

Moscow, Zashchita Rasteniy, No 7, 1972, p 26

Abstract: In northern Volgograd Oblast, winter and summer wheat suffers from brown and stem rust, which may affect 15-90% of the crop. Nitrogen fertilizers promote spread of the disease, while phosphorus and potassium fertilizers curb it. Agrotechnical measures, such as killing weeds, deep-plowing, and proper timing of sowing and harvesting are useful. However, in years with epiphytotics, it is necessary to use chemicals. A new Soviet compound No 868 was tested on an experimental farm in 1970 and 1971. In the summer, wheat fields were sprayed 1-3 times with a 1% aqueous solution of No 868 at the rate of 600-800 L/ha: first when rust spores appeared in the air, and then at intervals of 8-10 days. As a result, the spread of brown rust diminished from 28% in control fields to 6-16% and that of stem rust from 11.3% to 0.6-2.3%. Grain crops were 41.8, 43.3, and 38.7 centners/ha after single, double, and triple spraying, yielding net gains of 15, 21.3, and 19.85 rubles/ha. Thus, compound No 868 is an effective agent requiring just two applications.

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USSR

UDC 632.93:631.53.01

BEZRODNYI, G. P., Head of the Volgograd Plant Protection Station, and
SAF'YANOV, S. P., Senior Scientific Co-worker of the Volzhsk Scientific
Research Institute of Irrigated Land

"Preparation No 868 to Control Loose Smut"

Moscow, Zashchita Rasteniy, No 12, 1971, pp 27-28

Abstract: Test results are presented of preparation No 868 (an organic crystalline substance which dissolves well in water) obtained from the All-Union Institute for the Protection of Plants for production checking. It is used to control loose smut in spring wheat. Preparation No 868 resembles vitavax in its effect. The spread of the disease was limited by applying preparation No 868 to the seed before planting, but the net profit was increased insignificantly after subtracting the cost of the treatment for the irrigated and dryland test plots investigated.

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USSR

UDC: 548.735.46

KUZ'MIN, E. A., BOCHKOVA, R. I., SAF'YANOV, Yu. N., GOLOVACHEV,
V. P., and BELOV, N. V.

"Systematic Analysis of the Paterson Function on the Basis of
Crystal Symmetry"

Moscow, Kristallografiya, vol 18, No 4, 1973, pp 681-688

Abstract: This paper, bearing the subtitle "Principles of Rhombus Degeneration in the Vector Systems of Lower Syngony Crystals," is the fifth installment of a series bearing the general title given above. The function of the present installment is to consider cases of the degeneration of rhombi for variants of a particular cut, in Fedorov groups of crystals having lower syngonies with three and a family of symmetry elements. The degeneration of rhombi in Fedorov groups with a single symmetry element was examined in an earlier paper (E. A. Kuz'min, et al, Sb. Patersonovskiy metody rasshifrovki struktur -- Collection of Works on Paterson Methods of Structure Interpretation -- "Shtiintsa," Kishinev, 1972). The results obtained in that article are here extended to groups with several such elements. The authors thank V. V. Ilyukhin for his participation in the discussion of the results.

1/1

USSR

UDC 616.993.162-097.5

GASAN-ZADE, G. B., ALIYEV, E. I., and SAF'YANOVA, V. M., Scientific Research Institute of Medical Parasitology and Tropical Medicine imeni S. M. Kirov, Ministry of Health, Azerbaydzhan SSR, and All-Union Scientific Research Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Sciences USSR

"Detection of Specific Antibodies in Persons Convalescing From Cutaneous Leishmaniasis in Endemic Foci of Azerbaydzhan"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 543-547

Abstract: Adler's phenomenon, as quantitated by Saf'yanova, was used as a serological test to detect specific antibodies to cutaneous leishmaniasis in 51 Azerbaydzhanis with a history of the disease. (Adler's phenomenon -- the presence of homologous antibodies -- markedly changes the growth of Leishmania cultures on nutrient media containing immune rabbit sera). Adler's method revealed the presence of group-specific antibodies to Leishmania of mammals. However, like other serological tests, it was not species-specific, for the results were virtually the same when cultures of different Leishmania species (*L. tropica minor*, *L. tropica major*, and *L. donovani*) were used as antigens.

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USSR

UDC 616.993.162-036.21(574.12)

DUBROVSKIY, Yu. A. and SAF'YANOVA, V. M., Department of Diseases of
Natural Foci, Institute of Epidemiology and Microbiology imeni N. F.
Gamaleya, Academy of Medical Sciences USSR

"Natural Foci of Cutaneous Leishmaniasis Along the Middle Emba"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971,
pp 556-561

Abstract: A 1970 field trip in West Kazakh SSR resulted in the discovery of natural foci of cutaneous leishmaniasis in great gerbil colonies along the middle reaches of the Emba River (which flows southwest into the Caspian Sea). The most northerly point at which the pathogen of the disease was found is the left bank of the Emba opposite the settlement of Elubayshiye. The gerbils are continuing to move north and establishing new colonies. The principal parasite of the rodents is the sandfly *Phlebotomus mongolensis* Sinton. Its abundance in June is as high as in optimum habitats of sandflies in the southern desert. Two generations of the insect are possible during the summer. The northern boundary of the spread of the agent of cutaneous leishmaniasis along the Emba more or less coincides with the range of its main warm-blooded carrier, the great gerbil.

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USSR

KOSTETSKIY, B. I., SAGACH, M. F., LAVRUK, V. I., and PETROV, I. F.,
Kiev UDC 531.43.

"Contactless (Thermovisual) Method of Measuring the Temperature
on a Sliding Contact at External Friction"

Moscow, Mashinovedeniye, No 4, Jul-Aug 73, pp 116-119

Abstract: The method and the installation for the contactless
(thermovisual) measuring of actual temperatures (from 10-2000°C),
originating on friction surfaces, are described. The results of
experimental works in measuring temperatures of different pairs
of metals under conditions of dry and boundary friction are re-
ported. The dependence of the temperature change of the friction
surface on the duration of the experiment and the influence of
various lubrication media on the temperature of friction surfaces
are discussed by reference to diagrams. The advantages of the
thermovisual method, in comparison with other known methods, are
indicated. Operation characteristics of the thermovisual instal-
lation and of a thermopair (Chromel-Copel) with galvanometer are
presented. Six figures, one table, five bibliographic references.

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UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--COEFFICIENTS OF FRICTION OF AGRICULTURAL CHEMICAL POISONS WITH
RESPECT TO STEEL, CAST IRON, AND CERMET MATERIALS --U-
AUTHOR--(02)-ANOPA, V.D., SAGACH, M.F.
COUNTRY OF INFO--USSR
SCURLE--KIEV, TEKHNLOGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP
109-110
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--FRICTION COEFFICIENT, CAST IRON, STEEL, POISON, AGRICULTURAL
CHEMICAL, CERMET
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REL/FRAME--1999/1337
CIRC ACCESSION NO--AP0123295
STEP NO--UR/0413/70/000/001/0109/0110
UNCLASSIFIED

272 037
CIRC ACCESSION NO--AP0123295
ABSTRACT/EXTRACT--(U) GP-0-
FOR AGRICULTURAL CHEMICAL POISONS WITH RESPECT TO STEEL, CAST IRON, AND
CERMET MATERIALS.

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. COEFFICIENTS OF FRICTION ARE GIVEN

UNCLASSIFIED

USSR

UDC 629.7.036.54(536.246+536.9)001.2

ALEMASOV, V. YE., KLABUKOV, V. YA., ~~SAGADEYEV, V. I.~~, LUK'YANOV, YU. G.,
SHIGAPOV, A. B., and KUZ'MIN, V. A.

"Indicatrix of Oxide Particle Dissipation in Products of Combustion"

Kazan', Tr. Kazan. Aviats. In-ta (Works of Kazan' Aviation Institute), No 133,
1971, pp 20-29 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli,
No 2, Feb 72, Abstract No 2.34.118)

Translation: When studying the thermal radiation energy in combustion products containing solid and liquid particles of condensed aluminum, magnesium and other oxides we must know the angular distribution of dissipation radiation (dissipation indicatrix) as well as the absorption and dissipation coefficients. Presently available data on dissipation indicatrix apply basically to atmospheric physics problems. The article presents the algorithm developed by the authors for calculating the dissipation indicatrix by means of M-20, M-220 and BESM-4 computers. Indicatrix calculations with BESM-4 computers for wide range of temperatures and particle sizes of the products of combustion are also presented. 10 illustrations, 16 references.

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USSR

UDC: 591.185.5+612.821.8

SAPRYKIN, V. A. and SAGAL, A. A.

"Invariance Principle of the Perceptive Characteristics of the Human Auditory Analysor for Signal Compression or Expansion"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 2, 1973, pp 490-492

Abstract: The results of an experimental investigation into the adequacy of representation and the characteristics of the human auditory analysor apparatus as a stochastic communications system are given. Two basic parameters are considered: the indeterminacies of the signals and their energy levels, represented by the symbols of h and \mathcal{E} respectively. Details of the experiment and of the method followed are given in an earlier article (V. A. Saprykov et al, Biofizika, 13, No 6, 1968, p 1,085); the method of the present paper, however, differs from that of the first in the following way. In the first, the subject was given tonal signals, at an average succession interval of 10.4 sec, in random order against a continuous background of masking noise. The subject is required to minimize the errors in signal transmission. In the present paper, the auditory signals are given in two sets: one monaural, the other binaural. It is concluded that the characteristic parameters of the tonal signals are their signal/noise ratios rather than their frequency and duration, as other researchers (e.g., I. Hirsh, The Measurement of Hearing, N.Y., 1952) insist.

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1/2 010
UNCLASSIFIED
PROCESSING DATE--23OCT70
TITLE--SEPARATE BIAXIAL ORIENTATION OF POLYPROPYLENE FILMS -U-
AUTHOR--(03)-VLASOV, S.V., SAGALAYEV, G.V., GAVRILOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--PLAST. MASSY 1970, (3), 23-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--POLYPROPYLENE, PLASTIC FILM, PLASTIC MECHANICAL FILM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0656
CIRC ACCESSION NO--AP0119564
STEP NO--UR/0191/70/000/003/0023/0024
UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0119564
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. THE PRINCIPLES OF CROSSWISE ORIENTATION OF ISOTROPIC POLYPROPYLENE (I) FILMS AT VARIOUS TEMPS. AND THE PROPERTIES OF THE FILMS OBTAINED ARE DISCUSSED. THE OPTIMUM TEMP. OF CROSSWISE ORIENTATION IS 130-150DEGREES. RUPTURE OF I FILMS OCCURS AT 100-10DEGREES; AT 155-70DEGREES, THE FILMS UNDERGO DEORIENTATION. THE STRENGTH OF I FILMS AT 110-50DEGREES IS INDEPENDENT OF THE ORIENTATION TEMP. THE DEGREE OF CROSSWISE AND LENGTHWISE STRETCHING ARE RELATED TO THE ORIENTATION TEMP. AND THE STRENGTH OF THE FILMS OBTAINED.

UNCLASSIFIED

Acc. Nr:

APC049779

Abstracting Service:
CHEMICAL ABST. 5-10

Ref. Code:

4R 0191

101346j Effect of the glass filler on the properties of the filled material. Sagala, G. V.; Kukushkin, B. A. (USSR). Plast. Massy 1970, 44, 5-8 (Russ). Finely divided fillers, e.g. Aerosil-175 (I), Aerosil-300, and colloidal silica, were added to a glass-fiber-reinforced plastic (II) (prepd. from glass roving ZhS-24/60) and modified with phenol-HCHO resin R-2M) to reduce the stress in II. Addn. of 3% I effectively reduced the stress and increased the strength of II. Optimum content of the finely divided fillers always corresponded to an av. thickness of the binder film of $\sim 0.2 \mu$.

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UDC 621.791.75:62-434.1:62-416:539.377

SAGALEVICH, Y. M., Doctor of Technical Sciences, and SHVERSOV, V. A., Engineer,
Moscow Higher Technical School imeni N. E. Bauman

"Deformation During Welding of Ring Seams of Thin-Walled Shells"

Moscow, Svarochnoye Proizvodstvo, No 5, May 70, pp 8-10

Abstract: A study was made of the deformations taking place during welding of ring seams of thin-walled shells. It is shown that heating of thin shells during the welding of ring seams results in surface buckling. The height and dimensions of the buckled zone are determined by the parameters of its temperature field, the rigidity, and the shell material. Study of the residual and temporary displacements appearing during the welding of ring seams of thin shells made of AMG6 aluminum alloy, shows that the appearance of swelling where the welded seam is applied is due to the temperature expansion of the metal ahead of the heat source, and to the subsequent clamping of the raised edges during the formation of the welded seam. In addition, the permanent displacements are integrated with displacements from the assembly. The method of tightly pressing the welded edges to an underlying ring ahead of the heat source by means of a pressing roller which rolls along the shell surface, is considered the most effective method of preventing buckling deformations. It was established that pressing of the edges ahead of the heat source makes it possible to prevent the formation of residual displacements in thin shells made from aluminum alloys.

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Mechanical Properties

USSR

SAGALEVICH, YE. A., POTAK, YA. M.

UDC 669.15.018.8

"Effect of Delta Ferrite on the Mechanical Properties of Martensitic Stainless Steels"

Povysh. konstruktivn. prochnosti staley i splavov. No 2 -- V sb (Improving the Structural Strength of Steels and Alloys. No 2 -- collection of works), Moscow, 1970, pp 103-106 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I609)

Translation: A study was made of the effect of δ -ferrite on the mechanical properties of two melts of martensitic stainless steels with the following composition (in %): A -- C 0.065-0.079, Cr 13.28-13.48, Ni 2.54-7.12, Al 1.01-1.03, Mn 0.5, Si 0.6, N -- C 0.054-0.063, Cr 16.12, Ni 0.09-4.18, Mn 0.2, Si 0.15. The steel was quenched at 1,000-1,100° and tempered at 300°. The presence of 23% δ -ferrite in the steel of melt A does not lower a_H at room temperature; however, at -70° the value of a_H drops catastrophically. In samples of the melt N, the presence of 19% δ -ferrite lowers a_H sharply even at room temperature. This obviously is connected with the fact that the steel of melt N has coarser grain than the steel of melt A. Raising the tempering temperature to 500° intensifies the negative effect of the δ -ferrite. This is

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SAGALEVICH, YE. A., et al., Povysh. konstruktivn. prochnosti staley i splavov.
No 2, Moscow, 1970, pp 103-106

obviously connected with the phenomenon of 475° embrittlement which is exhibited especially sharply in ferrite. There are 3 illustrations, 1 table, and a 2-entry bibliography.

2/2

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Aluminum and Its Alloys

UDC 669.71:539.370

USSR

VAYNBLAT, Yu. M., and SAGALOVA, T. B.

"Grain Boundary Migration in the High-Temperature Deformation of Aluminum"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1322-1323

Abstract: In this study migration of grain boundaries was observed from the high-temperature rolling of aluminum. Aluminum grade A7, having an equiaxial structure and average grain sizes of 50, 200, and 1000 micron, was rolled at temperatures of -50, 20, and 200°C with reductions of 0.5 and 0.7 (true degrees of deformation were 0.8 and 1.2). After hot rolling the samples had a non-recrystallized structure consisting of sub-grains with an average size of 1.3 micron.

Polarized light in an optical microscope was used where the fibrous structure was visible: deformed grains were stretched in the direction of rolling. If the time of finding the metal in a deformation site is taken as 1 second, then the rate of migration amounts to 10^{-3} cm/sec. The rate of migration of boundaries was also measured for recrystallization at the time of the last

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USSR

VAYNBLAT, Yu. M., and SAGALOVA, T. V., Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1322-1323

anneal. At 300°C the rate of migration amounts to 10^{-6} cm/sec, which is three orders of magnitude lower than for hot rolling. A sharp acceleration of migration was caused by the high concentration of vacancies formed as a result of dislocation intersecting. Migration of boundaries, going in the direction of the accumulated energy gradient, is one of the processes leading to weakening of aluminum in hot deformation. According to the measure of increased degree of deformation, dislocation density and vacancy concentration increase. Both of these factors contribute to acceleration of both dynamic growth and migration of high-angle boundaries as a result of which at some stage of deformation an equilibrium will be established between processes of strengthening and weakening.

2/2

- 1 -

USSR

UDC 669.715'3'721:620.186:539.4

GALATSKIY, B. D., VAYNBLAT, Yu. M., PESHUKOV, K. G., KLEPACHEVSKAYA, S. Yu.,
SAGALOVA, T. B., and FEDOROVA, K. A.

"Dependence of Texture and Mechanical Properties on Shape Factor and Degree
of Deformation of Extruded Aluminum-Alloy Products"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa (Technology of Light
Alloys. Scientific and Technical Bulletin of the All-Union Institute of
Light Alloys), 1970, No 3, pp 28-35 (from RZh-Metallurgiya, No 12, Dec 70,
Abstract No 12 1757 by E. KADANER)

Translation: An investigation was conducted on alloy D16 produced under in-
dustrial conditions by the semicontinuous casting method with subsequent ex-
trusion under various regimes. With an increase in the shape factor of ex-
truded products, uniform variation of deformation texture from biaxial $\langle 111 \rangle$,
 $\langle 100 \rangle$ orientation to rolling texture takes place with predominant $\{110\}$ $\langle 112 \rangle$
orientation. With an increase in shape factor, strength anisotropy decreases.
With the same degree of deformation and shape factor, ultimate strength and
its anisotropy are independent of the size of the section of the product.
Five illustrations. Three tables. Bibliography of seven titles.

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SAGALOVICH, B. M.

JPRS 59054
17 May 1973

UDC: 612.85.014.421.7

POSSIBILITIES OF USING INDUCED POTENTIALS IN EVALUATING
FUNCTIONAL STATE OF AUDITORY ANALYZER

[Article by B.M. Sagalovich, G.G. Melnikova, Laboratory of Pathophysiology
(Chief - Professor B.M. Sagalovich) of Moscow Scientific Research Institute
of Ear, Nose and Throat (Director - distinguished scientist Prof. N.A.
Bobrovskiy); Moscow, Vsesoyuznyi Otorinolaringologicheskii, Russian, No 3, 1972, signed
to press 27 July 1971, pp 21-26]

Investigation of the functional state of various parts of the auditory
analyzer is enormously important for both theoretical and practical audiology.
Such investigation, however, may be done differently in relation to the periph-
eral and central parts of the analyzer. If the function of the auditory
receptor is evaluated by various indices with sufficient accuracy, determina-
tion of the auditory activity of the centers poses serious difficulties and
for this reason remains largely an unsolved problem. Successes in electro-
physiology during the last decade opened new premises for investigation of the
central auditory analyzer function, but meanwhile auditory physiology and the
audiological medicine are faced with a number of complex problems.

In light of current electrophysiological data evaluation of the state
of the auditory centers should be done either on the basis of recording of
spontaneous electric reactions or by means of investigation of induced poten-
tials. In the former case the discussion concerns the analysis and recording
of the effect of auditory stimuli on the electrical processes inherent to the
central nervous system in the state of rest. This was reflected in the utili-
zation of various electroencephalographic methods. However, the limitations
of these methods were rather quickly discovered. These limitations are related
primarily to the nonspecificity of the electric responses, also to the fact
that these responses are a manifestation of orientation reaction and therefore
die out rapidly.

Another possibility of electrophysiological investigation of the func-
tion of the auditory centers consists in recording the so-called induced
potentials, i.e., potentials recording response to acoustic stimuli. Here
the acoustic signals should have short duration and rapidly increasing inten-
sity. Such short signals, denoted as an acoustic click, carry no information

- 1 -

(I - USSR - C)

"about the frequency characteristic, i.e., about tonality. The electric response to the action of the acoustic click has a certain configuration with strict parameters. The described induced potential characterizes a functional state of the investigated center. Induced potentials, in contrast to changes of spontaneous electric activity, are characterized by auditory specificity; they occur only in the centers of the auditory system.

Such type of electrical reactions naturally attracts the attention of audiologists in connection with the need to develop methods of objective recording of the auditory perception process in the central parts of the analyzer. However, serious problems were encountered in the clinical solution of this problem. Whereas the potentials can be measured in animals by direct insertion of electrodes into the investigated centers, it is naturally essential in clinical investigations to ensure the recording of the response from the surface of the head. To overcome this difficulty a computer is used; it affords the possibility of averaging repetitive multiple responses of small magnitude, whereupon they can be distinguished from the noise background. Thus, Remond (1950), Barlow (1957), Gelster and coworkers (1958) and other specialists were able to record the potentials in humans, induced by various sensory stimuli. Lowell (1960), et al were the first to use such a method for measuring the auditory stimulus threshold of people with normal hearing. Later on works began to appear, in which the technique of recording potentials induced in human hearing were modified and improved.

As a result methods were proposed for recording the induced potentials of humans, both for short and comparatively long stimuli. The electric response is also found to be a function of the character of the stimulus. Short stimuli (acoustic clicks) induced "fast" potentials, developing within 30-50 msec with a latent period of 10-15 msec. Long stimuli, developing within potentials from 500 to 500 msec with a latent period of 50 msec and longer. Each form of potential has features in relation to the point of measurement: "fast" potentials may be measured both near the ear area of the head and other parts of the body. In addition to naming sensory motor or audiometer potentials (Nast, 1963, 1965; Davis, et al 1964, 1966; Ruhn, et al 1967; Bickford, et al 1963, 1964; Cody, et al 1964, 1965; Kandel, et al 1967; named postauricular potentials (Kiang and Cline, 1963; Yacobson, et al, 1963; Kandel and Spreng, 1965; Lowell, 1965; Yoshii, Okudaira, 1969, among others). "Slow" potentials are measured at the vertex, so they were also called "vertex" potentials. In the opinion of many investigators, these potentials may be used for recording response to tonal stimuli (Williams and Graham, 1963; Davis and Yoshie, 1963; Suzuki and Oriuchi, 1969; Taguchi, et al, 1969; Bodnerek, et al 1970; Gruber, 1970; Rotman, et al, 1970, among others). The physiological interpretation of induced responses to sound is quite complex and is not yet explained in many respects. The important point is that most investigators even now admit the possibility of using these potentials for objective evaluation of the auditory function and for making judgment about the character of responses of the central parts of the auditory analyzer.

There are reasons to assert that the "fast," "postauricular" induced potentials are the most accurate ones in the physiological sense. Butler, et

SAGALOVICH, B.M.

JPRS 59054
17 May 1973

POSSIBILITIES OF USING INDUCED POTENTIALS IN EVALUATING
FUNCTIONAL STATE OF AUDITORY ANALYZER

Article by B.M. Sagalovich, G.G. Vasil'yeva, Laboratory of Pathophysiology
of Ear, Nose and Throat (Director - distinguished Scientist Institute
Borovskiy) Moscow, Leningradskiy Universitet, N.A.
to press 27 July 1971, pp 21-26

Investigation of the functional state of various parts of the auditory
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Such investigation, however, may be done differently in relation to the periph-
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audiological medicine are faced with a number of complex problems.

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of the effect of auditory stimuli on the electrical processes inherent to the
central nervous system in the state of rest. This was reflected in the utili-
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of these methods were rather quickly discovered. These limitations are related
primarily to the nonspecificity of the electric responses, also to the fact
that these responses are a manifestation of orientation reaction and therefore
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potentials, i.e., potentials recording in response to acoustic stimuli. Here
the acoustic signals should have short duration and rapidly increasing inten-
sity. Such short signals, denoted as an acoustic click, carry no information

- 1 -

(I - USSR - C)

about the frequency characteristic, i.e., about tonality. The electric response to the action of the acoustic click has a certain configuration with strict parameters. The described induced potential characterizes a functional state of the investigated center. Induced potentials, in contrast to changes of spontaneous electric activity, are characterized by auditory specificity; they occur only in the centers of the auditory system.

Such type of electrical reactions naturally attracts the attention of audiologists in connection with the need to develop methods of objective recording of the auditory perception process in the central parts of the analyzer. However, serious problems were encountered in the clinical solution of this problem. Whereas the potentials can be measured in animals by direct insertion of electrodes into the investigated centers, it is natural in clinical investigations to ensure the recording of the response from the surface of the head. It affords the possibility of overcoming this difficulty a computer is used; it affords the possibility of averaging repetitive multiple responses of small magnitude, whereupon they can be distinguished from the noise background. Thus, Rendell (1959), Barlow (1957), Gelster and coworkers (1958) and other specialists were able to record the potentials in humans, induced by various sensory stimuli. Lowell (1960), et al were the first to use such a method for measuring the auditory stimulus threshold of people with normal hearing. Later on works began to appear, in which the technique of recording potentials induced in human hearing were modified and improved.

As a result methods were proposed for recording the induced potentials of humans, both for short and comparatively long stimuli. The electric response is also found to be a function of the character of the stimulus. Short stimuli (acoustic clicks) induced "fast" potentials, developing within 30-50 msec with a latent period of 10-15 msec. Long stimuli produced "slow" potentials from 300 to 500 msec with a latent period of 50 msec and longer. Each form of potential has features in relation to the point of measurement: other parts of the body. In addition to naming sensory motor or audiomotor potentials (Phast, 1963; Davis, et al 1964, 1966; Rabin, et al 1967; Blackford, et al 1963, 1964; Guly, et al 1964, 1966; among others), they also named postauricular potentials (Kiang and Crist, 1963; Yost, et al 1967; others). "Slow" potentials are measured at the vertex, they also called "vertex" potentials. In the opinion of many investigators, 1969, among potentials may be used for recording responses to tonal stimuli (Williams and Graham, 1963; Davis and Yoshie, 1963; Suzuki and Origuchi, 1969; Taguchi, et al, 1969; Bodnerek, et al 1970; Suzuki and Origuchi, 1969; to sound is quite complex and is not yet explained in many respects. The important point is that most investigators even now admit the possibility of using these potentials for objective evaluation of the auditory function and for making judgment about the character of responses of the central parts of the auditory analyzer.

There are reasons to assert that the "fast," "postauricular" induced potentials are the most accurate ones in the physiological sense. Butler, et

USSR

UDC 616.28-072.7:615.373.36+615.849.66]-092.9

SAGALOVICH, B. M., and SENYUKOV, M. V., Laboratory of Pathophysiology, Moscow Scientific Research Institute of the Ear, Throat, and Nose

"Effect of Sensitization of the Organism on the Permeability of the Blood-Labyrinth Barrier to Labeled Streptomycin and Radiophosphorus"

Kiev, Zhurnal Ushnykh, Nosovykh, i Gorlovykh Bolezney, No 4, Jul/Aug 70, pp 18-24

Abstract: Rabbits were sensitized with normal horse serum injected intramuscularly four times every other day. Three weeks later the animals were given streptomycin labeled with S³⁵ or P³² to determine the permeability of the blood-labyrinth barrier to these substances. Sensitization markedly increased the permeability of the barrier between the blood and perilymph, for both labeled streptomycin and radiophosphorus, the extent varying with the degree of sensitization of the animals. The increase was particularly evident in functional hearing tests (sound at a frequency of 8 KHz, 70 db, 5 min exposure, bone conduction).

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USSR

UDC 612.85.014.421.7

SAGALOVICH, B. M. and MELKUMOVA, G. G., Laboratory of Pathophysiology, Moscow Scientific Research Institute of Ear, Nose, and Throat

"Possibility of Using Evoked Potentials to Evaluate Acoustic Function"

Moscow, Vestnik Otorinolaringologii, No 5, 1972, pp 21-26

Abstract: In rats exposed to sounds of varying durations and intensities, prolonged tones reduced the amplitude of the evoked potentials and, in some experiments, also lengthened the latency period of the positive phase. The magnitude of the changes was determined by the intensity and frequency characteristics of the tone. The evoked potentials began to be suppressed only when a tone reached a particular intensity. With increasing intensity, they became completely suppressed. Such suppression of evoked potentials can be considered an objective test of the ability to hear sounds of different frequencies and intensities whether in the audible frequency range or in the ultrasonic part of the spectrum.

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Acc. Nr: **AP0034678**

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp **116-120**

REGULARITIES OF ABSORPTION AND DISTRIBUTION OF SEMI-SYNTHETIC
PENICILLINS—METHICILLIN AND OXACILLIN IN PATIENTS WITH CHRONIC
KIDNEY INSUFFICIENCY

Vasina, T. A.; Ved'mina, Ye. A.; Sagalovich, G. M.;
Mikheyeva, Ye. V.; Levitskiy, E. R.

Institute for Clinical and Experimental Surgery, Microbiology Department of Central
Post-Graduate Medical Institute, Moscow

The dynamics of methicillin and oxacillin distribution in the blood of patients with severe affections of the kidney function and impaired clearance for urea was significantly changed, resulting in very high blood levels of the antibiotics and their prolong circulation in the organism, which was parallel to the degree of the affection of the kidney excretion function. The process of hemodialysis favoured rapid excretion of the antibiotics and provided the dynamics of their levels close to that in patients with normal functions of the kidneys.

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REEL/FRAME

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USSR

UDC: 681.3

KADYROV, U. S., SAGALOVICH, Yu. L.

"Complexity of a Linear Decoder"

V sb. Vopr. kibernetiki (Problems of Cybernetics--collection of works),
vyp. 43, Tashkent, 1971, pp 165-172 (from RZh-Kibernetika, No 12, Dec
71, Abstract No 12V912)

Translation: A mathematical model of the complexity of a linear decoding
circuit is described. It is concluded that the complexity of the decoding
circuit under certain conditions is either less by an order, or vanishes
exponentially with respect to the complexity of a combination unit in an
automaton realized by the method of disjunction of "spheres". V. Mikheyev.

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USSR

PINSKER, M. S.; ~~SAGALOVICH, Y. I.~~

"Lower Bound of the Capacity of a Code of the States of an Automaton"

Moscow, Problemy Peredachi Informatsii; July-September, 1972; pp 58-66

ABSTRACT: The lower bound is obtained for the number of states M of an automaton which are stable for conflicts and malfunctions of any t or less of the total number n of its internal elements. The bound is obtained by a method of random coding of the states of the automaton by code words of length n . The total number of code words ensuring that the automaton will have the above-mentioned property is called the code of the states of the automaton. A problem is solved in the general case of q -positioned internal elements, in connection with which two models of the states are suggested. The upper bound is found for the correcting capability t of a code of the states of an automaton in which its capacity M retains an exponential increase. In particular, for $q = 2$ this is true for every case in which $t < n/16$. One theorem is presented.

The article includes 21 equations. There are three references.

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USSR

UDC 629.735.764.5:621.316.721(?88.8)

SAGALOVSKIY, V. I., SHATILOV, V. V.

"An Angular Current Regulator"

USSR Author's Certificate No 251061, Filed 29 Jan 68, Published 19 Feb 70 (from RZh-Electrotehnika i energetika, No 9, Sep 70, Abstract No 9L216 P)

Translation: This author's certificate introduces a device for controlling a DC electric motor. Existing angular current regulators have a zone of hysteresis in the region of small magnet gaps. This zone of insensitivity is eliminated in the proposed angular current regulator by using an additional winding which is connected to the collector of a transistor whose emitter-base circuit is connected in the diagonal of a bridge comprised of the excitation winding of the electric motor, the angle column of the regulator and a divider. The angle column is connected in series with the excitation winding of the electric motor, and the control winding of the angular current regulator is connected in series with the armature of the electric motor. To select the amplitude of the regulating current, there is a bias winding whose bias voltage is directed counter to that of the control winding. Connected in series with this winding is an adjustable resistor whose value determines the current strength. The bias voltage of the limit winding which eliminates the zone of insensitivity is directed counter

1/2

1/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--EFFECT OF CARBON CONTENT ON THE STRENGTH OF CASE HARDENED STEEL -U-
AUTHOR--SAGARDZE, V.S. S
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. DGRAB. METAL. 1970, (3), 20-3
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALLOY COMPOSITION, CARBON, CHROMIUM NICKEL STEEL, YIELD
STRENGTH, CASE HARDENING, INTERNAL STRESS/(U)KHZN4 STEEL, (U)KHGT STEEL

CONTROL MARKING--NO PESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REFL/FRAME--1989/1932 STEP NO--UR/0129/70/000/003/0020/0023

CIRC ACCESSION NO--AP0108261

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108261

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF C CONTENT IN THE RANGE 0.07-0.45PERCENT ON THE STRENGTH OF CASE HARDENED CR-NI (TYPE KH2N4) AND CR-MN-TI (TYPE KHGT) STEELS WAS INVESTIGATED. ALL OTHER FACTORS BEING EQUAL, THE STRENGTH OF THE CASE HARDENED STEELS DEPENDS ON THE YIELD POINT OF THE CORE AND THE COMPRESSIVE RESIDUAL STRESSES IN THE CASE HARDENED OUTER LAYER. WITH THE INCREASE OF C CONTENT THE CORE YIELD POINT INCREASES WHILE THE STRESSES IN THE CASE HARDED LAYERS DECREASE. THIS LEADS TO A CERTAIN OPTIMUM C CONTENT WHICH GIVES THE HIGHEST STRENGTH TO THE CASE HARDENED STEEL. IN TURN THIS OPTIMUM DEPENDS ALSO ON THE DEGREE OF ALLOYING AND THE DIMENSIONS OF THE STEEL SAMPLE. IN STEEL PARTS OF 8-12 MM CROSS SECTION THE HIGHEST STRENGTH WAS OBTAINED AT A C CONTENT OF 0.19-0.24PERCENT C.

UNCLASSIFIED

USSR

UDC: 669.14:539.4

SAGARADZE, V. V., MALYSHEV, K. A., Institute of Physics of Metals, UNTs,
Academy of Sciences of the USSR

"Influence of Alloying Elements on the Nature of $\alpha \rightarrow \gamma$ Transformation and Degree of Austenite Phase Hardening in Chrome-Nickel Stainless Steels"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 3, Mar 72, pp 607-613

Abstract: The authors investigate the effect which alloying with W, Mo, Nb, V, Ti, Co, Mn and Cu has on the nature of the $\alpha \rightarrow \gamma$ phase transformation and on austenite hardenability in chrome-nickel stainless steels due to direct and reverse martensite transformation. It is found that the reverse $\alpha \rightarrow \gamma$ transformation has the principal features of martensite transformation -- taking place by a crystallographically ordered path accompanied by a change in the shape of the transformed sections, which leads to an anomalous change in the length of grain-oriented specimens in the process of austenite formation. Alloying with W, Mo, Nb, V and Ti, in contrast to Co, Mn and Cu, delays the development of diffusion processes of randomizing in the presence of heat, which appreciably increases the effectiveness of phase hardening of

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USSR

SAGARADZE, V. V., MALYSHEV, K. A., Fizika Metallov i Metallovedeniye, Vol 33, No 3, Mar 72, pp 607-613

austenite due to $\gamma \rightarrow \alpha \rightarrow \gamma$ transformation. Austenite phase hardening in Cr-Ni stainless steels alloyed with 2-3% Mo, 3% W, 1.5% Ti, 2.5% V or 1-2% Nb increases the yield stress measured at 350°C from 13 to 40-60 kg/mm² at high values of relative longitudinal extension.

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SAGATELOV, V.S.

Radioastronomy

A SYSTEM FOR AUTOMATING OBSERVATIONS ON THE RTI-7.50/250 NVTU
RADIO TELESCOPE

UDC 621.396.628:523.164

Article by A.A. Pashchukov, A.A. Kozanov and V.S. Sagatlov
of the Moscow Higher Technical School named N.E. Bauman
Izvestiya Vsesoyuznogo nauchnoykh issledovaniy -- Radiofizika, Russian,
Vol 16, No 5, 1973, submitted 4 November 1972, pp 703-706

SOI JPRS 59965
7 SEP 73

(3)

CAROL

The first solar and lunar observations made on the RTI-7.5/250 NVTU (Moscow Higher Technical School named N.E. Bauman) radio telescope showed that the minimal width of the radiation pattern was close to that computed ($0.5 \approx 30''$ at $\lambda = 1$ millimeter). For practical work on radio sources the position of the antenna's radiation pattern must be controlled in space with a precision of no less than $0.5-1/6$ of $0.5'$ that is, 10 to 5". To solve this problem, a design has been developed for a high-precision synchronous-tracking drive (SSP) system whose implementation will permit RTI-7.5/250 antennas to have the following operating modes:

- Automatic guidance and tracking per UVM (general-purpose computer) data, with or without scanning of the targets;
- Semiautomatic guidance of slow and rapid motions;
- Automatic tracking per a photo-guide;
- Rapid resetting of antennas in all operating-angle bands and
- Functional monitoring of the whole control complex in a local control mode.

Inventive solutions of the precision and stability of the radio telescope's control systems, which were examined as a combined linear pulsed (input any) system, were made with a

USSR

UDC 614.449.57:615.285.7

LINEVA, V. A., PRSHIVORA, M., LEVIYEV, P. YA., OKULOV, V. P.,
GADZHIZALOV, D., SANINA, M. M., SAGATELOVA, I. S., and OBOLENSKAYA,
L. F.

"Trails of the Czechoslovak Insecticide ES-50 Metathion in the USSR.
I. ES-50 Metathion Used to Control the Housefly"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2,
1970, pp 211-220

Abstract: ES-50 metathion, an organophosphorus compound derived from phenitrothion O, O-dimethyl (O-3-methyl-4-nitrophenyl) thio-phosphate, was developed and tested in Czechoslovakia where it demonstrated a broad spectrum of action against flies, cockroaches, ticks, and crop pests. It has low toxicity for warm-blooded animals and no cumulative effect. Laboratory and field tests of the insecticide in five different climatic regions of the Soviet Union showed that it is highly effective in a dose of 2 g/m² of treated surface for 30-60 days. The temperature and humidity are the most important factors in the action of metathion. The higher the temperature and

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USSR

LINEVA, V. A., et al., Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2, 1970, pp 211-220

humidity, the more toxic its effect. Increasing the humidity of the room or moistening the treated surfaces increases metathion's potency, especially on glass or wood. Among the negative features: (i) it has an unpleasant odor; (ii) it leaves marks on the treated surfaces; (iii) flies seem to develop resistance to it fairly quickly.

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USSR

UDC 519.2

SAGATELYAN, K. V.

"Markov Processes in Complexes"

Uch. zap. Yerevan. un-t. Yestestv. n. (Scientific Notes of Yerevan University. Natural Sciences), 1971, 3 (118), pp 3-7 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V33)

Translation: A study was made of an abstract, finite or infinite complex K of skeletons (RZh-Matematika, 1972, 5B890). It is naturally defined when the set of vertexes R of the complex separates other sets of vertexes A and B . The Markov process x_a is introduced where a runs through the set of vertexes of the complex, and the values of the process are independent for $a \in A$ and $b \in B$ if x_r , $r \in R$ are given and R separates A and B . The author proved the existence and uniqueness of the continuation of the coordinated family of skeletal processes K to the K Markov process.

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USSR

UDC: 51

SAGATELYAN, K. V.

"On Reducing One Class of Infinite Positional Games to Canonical Form"

Uch. zap. Yerevan. un-t. Yestestv. n. (Scientific Notes. Yerevan University. Natural Sciences), 1971, No 2, 117, pp 3-9 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V431)

Translation: There are certain difficulties which arise in attempts to introduce mixed strategies in positional games with a continual set of alternatives and information sets. For Auman games, the author defines a class of fairly simple n-step games (games with pure memory) in which the problem of introducing mixed strategies reduces to defining a measure on an n-dimensional cube. The concept of the canonical form of a game is introduced. There are several inaccuracies. Ya. Klyushin.

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USSR

UDC 542.91+547.831.2

GYUL'BUDAGYAN, L. V., SAGATELYAN, S. A., Yerevan State University

"Quinaldine Derivatives. XXI. β -(2-methyl-4-oxy(chloro)-6-amino-3-quinolyl) Propionic Acids"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol XXIV, No 2, 1971, pp 157-160

Abstract: A study is made of the synthesis of 6-amino derivatives of β -(2-methyl-4-oxy(chloro)-6-amino-3-quinolyl) propionic acids (II, VII). The (II) acid is obtained by sulphuric acid hydrolysis of 2-methyl-3-(γ,γ -dichloro-allyl)-4-oxy-6-acetaminoquinoline (I) which was synthesized previously [L. V. Gyl'budagyan, et al., Arm. Khim. Zh., 24, 38, 1971]. The acid was obtained by saponification and deacetylation of the ethyl ether of β -(2-methyl-4-oxy-6-acetamino-3-quinolyl) propionic acid (IV) obtained by thermal ring formation of α -(β -carbethoxyethyl)- β -(*n*-acetaminophenylamino) crotonic acid (III). By sulphuric acid hydrolysis of 4-chloro analog of I(VI), the 4-chloro analog of II(VII) is obtained. The VII was also obtained from the 4-chloro analog of IV(V) obtained by interaction of IV with POCl_3 . The experimental procedures, some physical-chemical properties and yields are given for the mentioned compounds.

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SAGATOV, E. A.

SAGATOV, E. A.,
NARATOV, N. U.

SAGATOV, E. A.,
NARATOV, N. U.

Yegorov, Yu. P.,
Petrov, A. S.

Senkevich, B. V.,
Lyubkov, Ye. I.,
Osipov, Ya. H.

Vaytsel, V. I.,
Khmelevtsov, S. S.

Gent, V. N.,
Kabanov, H. V.

Vlasov, G. I.,
Levin, I. H.

Lobkovs, L. M.

Milyutin, Ye. P.,
Lobkova, L. H.,
Leykova, T. P.,
Chistyakov, A. B.

Arsen'yan, T. I.,
Semenov, A. A.

Gusev, V. G.,
Vorobeychikov

Arsen'yan, T. I.

Vanevskan, R. A.,
Labedeva, L. H.,
Samykin, H. I.

Femchenkov, V. H.,
Shadikov, O. A.

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TECHNICAL TRANSLATION

AKM / FSTC-JIT-23-2015-72
29 Nov 72
ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968

RUSSIAN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYI IZLUCHENIYEM

AUTHOR:
L. A. DERUGIN, ET AL.

SOURCE:
KIEV ORDER OF LENIN STATE UNIVERSITY
INENI T.G. SCHEVCHENKO

Translated for FSTC by ACS1

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USSR

UDC 576.851.45.098.31:577.158.8

GOLUBINSKIY, YE. P., RUBLEV, B. D., KIRDEYEV, V. K., and SAGATOVSKIY, V. N.,
Rostov-na-Donu Anti plague Institute

"Cytochromes of Plague Bacteria"

Moscow, Voprosy Meditsinskoy Khimii, Vol 19, No 1, Jan/Feb 73, pp 38-42

Abstract: Differential spectrophotometry of intact cells and empty membranes of Pasteurella pestis strains EV and No 17 revealed beta and alpha absorption maxima, indicating the presence of cytochromes b_1 , b , and a_2 . Photoreactivation of respiration with monochromatic blue and green light (400-480 and 510-600 mμ) in a 1:5 mixture of oxygen and carbon monoxide also established the presence of cytochrome O, which is the terminal oxidase in the plague bacterium's electron transfer chain, reacting directly with oxygen. The quantity of cytochromes in P. pestis is approximately the same as in other heterotropic microorganisms. Comparison of the concentration of cytochromes per mg of intact bacteria and per mg of empty membranes indicates that the cytochromes are attached to the membranes.

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